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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,991	09/02/2003	John Cairney	07648.0023-01	1585
22852	7590	07/18/2006	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			BRUSCA, JOHN S	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/651,991

Applicant(s)

CAIRNEY ET AL.

Examiner

John S. Brusca

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 42-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 42-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/2/2003</u>  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of SEQ ID NO:328 in the reply filed on 21 June 2006 is acknowledged.

***Drawings***

2. The drawings were received on 12 November 2004. These drawings are acceptable.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 42-46 are indefinite for recitation of the term "staged embryos" because it is not clear if the term is limited to plant embryos or embryos of any organism. For the purpose of examination, the term has been assumed to mean staged plant embryos.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 42 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwang et al.

The claims are drawn to a method of varying growth conditions of plant embryos, determining the RNA expression profiles of the embryos in control and varied growth conditions, and correlating the change in RNA expression and developmental effect in the embryos.

Hwang et al. shows in the abstract and throughout that rice embryos grown under anoxic conditions have increased expression of alpha amylase genes relative to control growth conditions. Hwang et al. conclude on pages 915-919 that the ability of rice embryos to elevate alpha amylase gene expression in anoxic conditions allows for increased survival under anoxic conditions, and that this trait is not shared with some other cereal species.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al. in view of Li et al. in view of Lu et al.

The claims are drawn to a method of varying growth conditions of plant embryos, determining the RNA expression profiles of the embryos in control and varied growth conditions, and correlating the change in RNA expression and developmental effect in the embryos. In some embodiments the embryos are altered by use of antisense nucleic acid molecules linked to stage specific promoters.

Hwang et al. shows in the abstract and throughout that rice embryos grown under anoxic conditions have increased expression of alpha amylase genes relative to control growth conditions. Hwang et al. conclude on pages 915-919 that the ability of rice embryos to elevate alpha amylase gene expression in anoxic conditions allows for increased survival under anoxic conditions, and that this trait is not shared with some other cereal species. Hwang et al. does not show use of antisense nucleic acid molecules linked to stage specific promoters.

Li et al. show in the abstract and throughout use of an antisense construct that inhibits expression of an embryonic transcription factor. Li et al. show that inhibition of expression of the embryonic transcription factor allow for insights in the function of the transcription factor PEI1.

Lu et al. details the promoter of a rice alpha amylase gene promoter.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of analysis of embryonic expression of alpha amylase genes in rice embryos of Hwang et al. by use of an alpha amylase antisense construct because Li et al. shows that antisense constructs allow for determination of the effect of inhibition of

expression of a targeted gene in plant embryos, and Lu et al. shows a alpha amylase promoter that could be used in the method of Li.

10. Claims 42 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al. in view of An et al.

The claims are drawn to a method of varying growth conditions of plant embryos, determining the RNA expression profiles of the embryos in control and varied growth conditions, and correlating the change in RNA expression and developmental effect in the embryos. In some embodiments the data is correlated in a relational database.

Hwang et al. shows in the abstract and throughout that rice embryos grown under anoxic conditions have increased expression of alpha amylase genes relative to control growth conditions. Hwang et al. conclude on pages 915-919 that the ability of rice embryos to elevate alpha amylase gene expression in anoxic conditions allows for increased survival under anoxic conditions, and that this trait is not shared with some other cereal species. Hwang et al. does not show use of a relational database.

An et al. shows a database termed 3DinSight that is a relational database useful for studying relationships of biomolecular data from different sources.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Hwang et al. by use of a relational database because An et al. shows that relational databases are useful to store biomolecular data from a variety of different sources.

***Allowable Subject Matter***

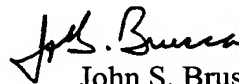
11. Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on 571 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 9 July 2006  
John S. Brusca  
Primary Examiner  
Art Unit 1631

jsb